

WHAT IS CLAIMED IS:

1. An aluminum alloy structural plate excelling in strength and corrosion resistance, comprising 4.8-7% (mass%, hereinafter the same) Zn, 1-3% Mg, 1-2.5% Cu, and 0.05-0.25% Zr, with the remaining portion consisting of Al and impurities, wherein the aluminum alloy structural plate has a structure containing 25% or more of grain boundaries with misorientations of 3-10° at the plate surface.

2. The aluminum alloy structural plate excelling in strength and corrosion resistance, wherein the average grain size is 10 μm or less at the plate surface.

3. A method of manufacturing an aluminum alloy structural plate excelling in strength and corrosion resistance, comprising: homogenizing an ingot of an aluminum alloy having the composition according to claim 1; hot rolling the ingot; repeatedly rolling the hot-rolled product at 400-150°C so that the degree of working is 70% or more to produce a plate material with a specific thickness; subjecting the plate material to a solution heat treatment at 450-490°C for five minutes or more; and cooling the resulting plate material at a cooling rate of 10°C/second or more.

4. A method of manufacturing an aluminum alloy structural plate excelling in strength and corrosion resistance,

comprising: homogenizing an ingot of an aluminum alloy having the above composition; hot rolling the ingot; repeatedly rolling the hot-rolled product at 400-150°C in a state in which rolls for hot rolling are heated at 40°C or more so that the degree of working is 70% or more to produce a plate material with a specific thickness; subjecting the plate material to a solution heat treatment at 450-500°C for five minutes or more; and cooling the resulting plate material at a cooling rate of 10°C/second or more.

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